

AMENDMENT(S) TO THE CLAIMS

1-18. (canceled)

19. (New) A method of loading a fibrous stock suspension containing chemical pulp fibers with calcium carbonate, comprising the steps of:

adding one of calcium oxide and calcium hydroxide in one of a liquid form and a dry form into the fibrous stock suspension;

5 adding gaseous carbon dioxide into the fibrous stock suspension;
precipitating of the calcium carbonate through said carbon dioxide; and
refining of the fibrous stock suspension during said precipitating step.

20. (New) The method of claim 19, further comprising the step of applying a refining force in the range of between approximately 0.1 and 300 kWh per ton of dry paper pulp, said precipitating step and said refining step are accomplished in a disperger.

21. (New) The method of claim 19, further comprising the step of providing raw material to the fibrous stock suspension, said raw material being at least one of aqueous fibrous stock material and aqueous paper stock, said raw material having a consistency of between approximately 0.1 to 20%.

22. (New) The method of claim 21, wherein said consistency is between approximately 2 to 6%.

23. (New) The method of claim 21, wherein said adding one of calcium oxide and calcium hydroxide step includes the step of mixing said calcium hydroxide into one of said aqueous fibrous stock material and said aqueous paper stock thereby forming a mixture having a solids content of between approximately 0.01 and 60%.

24. (New) The method of claim 23, wherein said mixing step occurs in one of a static mixer and an intermediate vat.

25. (New) The method of claim 19, wherein said adding gaseous carbon dioxide includes the step of mixing said carbon dioxide into the fibrous stock suspension that is moist;

26. (New) The method of claim 19, wherein at least one of a refiner, a disperger, and a fluffer fiber loaded precipitated calcium carbonate (FLPCC) reactor are used as at least one of a reactor and a static mixer.

27. (New) The method of claim 26, wherein the fibrous stock suspension has one of a fibrous stock content and a paper content of between approximately 0.01 and 15% while in said static mixer.

28. (New) The method of claim 26, wherein the fibrous stock suspension has one of a fibrous stock content and a paper content of between approximately 2 and 40% while in one of said refiner and said disperger.

29. (New) The method of claim 26, wherein the fibrous stock suspension has one of a fibrous stock content and a paper content of between approximately 15 and 60% while in said fluffer-FLPCC-reactor.

30. (New) The method of claim 19, further comprising the step of supplying dilution water one of prior to, during and after either of said adding steps.

31. (New) The method of claim 19, wherein energy is expended in the method of between approximately 0.3 and 8 kWh/t.

32. (New) The method of claim 31, wherein said energy is between approximately 0.5 and 4 kWh/t.

33. (New) The method of claim 19, wherein a process temperature is maintained during the method of between approximately -15° C and 120° C.

34. (New) The method of claim 33, wherein said process temperature is between approximately 20° C and 90° C.

35. (New) The method of claim 19, wherein the method produces calcium carbonate in at least one of rhombohedral, scalenohedron and spherical crystals.

36. (New) The method of claim 35, wherein said crystals measure between approximately 0.05 and 5 μm .

37. (New) The method of claim 36, wherein said crystals measure between approximately 0.3 and 2.5 μm .

38. (New) The method of claim 19, further comprising the step of using mixing elements that are one of static, moving and rotating.

39. (New) The method of claim 19, wherein a pressure is maintained in the range of approximately 0 to 15 bar.

40. (New) The method of claim 39, wherein said pressure is between approximately 0 and 6 bar.

41. (New) The method of claim 19, wherein a ph is maintained in the fibrous stock suspension of between approximately 6 and 10.

42. (New) The method of claim 41, wherein said ph is between approximately 6.5 and 9.5.

43. (New) The method of claim 19, wherein a reaction time is expended of between approximately 0.01 and 1 minute.

44. (New) The method of claim 19, wherein a reaction time is expended of between approximately 0.05 and 10 seconds.

45. (New) A fibrous stock suspension loading apparatus, comprising:

a static mixer mixing calcium hydroxide into the fibrous stock suspension; and

at least one of a disperger and a refiner for one of fluffing and refining of the fibrous stock suspension and to precipitate the calcium hydroxide in a carbon dioxide atmosphere while

5 creating fibers that are loaded with calcium carbonate in the fibrous stock suspension.